132. KEDESTES NIVEOSTRIGA, Trimen.

Karkloof, 8th, 15th, 19th, and 20th February, 1897.
New to the Museum collection.

133. GEGENES LETTERSTEDTII, Wallgr.

Estcourt, 4th September, 3rd, 8th, and 17th October; Frere, 5th, 6th, and 9th December, 1896.

Mr. Marshall calls this *G. hottentota*, but an examination of the type by Dr. Scudder proved the latter to be *G. obumbrata*.

134. GEGENES OCCULTA, Trimen.

Pamphila occulta, Trimen, P. Z. S. 1891, p. 103.

Tugela River, 11th, 12th, and 15th November, 1896.
New to the Museum collection.

135. PARNARA MATHIAS, Fabr.

Malvern, 8th and 13th August; Estcourt, 27th November Frere, 5th and 7th December, 1896.

136. RHOPALOCAMPTA KEITHLOA, Wallgr.

Malvern, 8th August, 1896.

EXPLANATION OF PLATE L.

Fig. 1. *Pseudonympha vigilans*, ♂, p. 838.
2. „ *pœtula*, ♂, p. 838.
3. *Acræa burni*, ♂, p. 841.
4. *Cacyreus palæmon*, ♂, p. 845.
5. „ *marshalli*, ♂, p. 845.
6. *Cyclyrius noquasa*, ♂, p. 846.
7. *Aphnæus hutchinsonii*, ♂, p. 849.
8. *Terias marshalli*, ♂, p. 851. (Wet phase.)
9. „ „ (Dry phase.)

3. On the Habits of the Sydney Bush-Rat (*Mus arboricola*). By EDGAR R. WAITE, F.L.S., Zoologist, Australian Museum, Sydney. With a Note by OLDFIELD THOMAS, F.Z.S.

[Received August 6, 1897.]

Shortly after taking possession of a new house at Mosman's Bay, Sydney, from which the builders had scarcely departed, our household was made well aware that a colony of rats had established themselves overhead. As they were evidently in considerable numbers, a six-way rat-trap was obtained, set and baited in the orthodox manner with bacon and cheese. Seven weeks passed by and none of the traps were sprung, although the nightly gambols in no way diminished. At the end of that period a single rat was caught, and on removing it from the trap it was found to be a Bush or Native Rat. Recognizing the species, and having heard that it fed chiefly if not exclusively

upon fruit, the traps were rebaited with bananas and peaches, and next morning there were three examples in the traps and again on the following day three more. Afterwards they were caught in ones and twos until they were either exterminated or scared from the dwelling.

On mentioning the circumstance to others at Mosman's Bay, I learned that it is quite common for Bush-Rats to take possession of new houses, and one man, a builder, who has had many opportunities of seeing these animals, tells me that while the common House-Rat (*Mus decumanus*) is usually found on or near the ground, the Bush-Rats invariably ascend into the upper regions; this is quite in accord with their habits as observed in the bush. The reason that new houses are more frequently occupied by Bush-Rats than older tenanted ones may be partly accounted for by the cat, which, commonly introduced with the human inhabitants, speedily clears them away.

Of the rats obtained, a number were kept alive in a suitable cage and became very tame; they were fed upon fruit—grapes, bananas, peaches, and apples, and would also eat bread and drink milk, but flesh foods were left untouched.

Dr. James C. Cox informs me that at his residence at North Sydney, these Bush-Rats have for several years occupied the roof, and that they emerge at dusk, descend by means of the vines, and feed upon the seeds of various plants in the garden, notably *Tecoma australis* and *Mandevillia suaveolens*; they also ascend the highest native fig-trees (*Ficus macrophylla*) and feed upon the fruit.

Mr. Robert Etheridge, Jr., while residing at Summer Hill, a suburb of Sydney, was similarly troubled with these rats in his house, and only obtained some immunity on cutting down a large branch which the rats used to traverse in order to reach the roof.

Mr. J. Douglas Ogilby also describes to me how at Petersham, Sydney, these rats infest the peach, apple, and other orchard trees, and destroy large quantities of fruit; he has also repeatedly witnessed them seize and devour the singing locusts (*Cicadidæ*), and describes them as frisking about the branches with great agility.

One other article of diet is still to be mentioned. Many of the Sydney suburban gardens are overrun with a common English snail, *Helix aspersa*, which flourishes to a far greater extent than I ever saw it at home[1]; during the cooler weather, when they congregate in thousands, and hibernate beneath upturned flower-pots, old boxes, and similar retreats, the rats make speedy war upon them by biting off the apex of the shell and extracting the succulent mollusc. By the kindness of Mr. J. J. Fletcher I have examined a number of empty shells, and all have, without exception, been treated by the rats in the manner indicated; in

[1] This is but another instance of how objects introduced from Europe luxuriate in Australia. Rabbits, Sparrows, Carp, and Weeds are still more familiar examples.

no single instance was the lip of the shell touched. This habit of attacking the weakest part of the shell has not been learned by one colony of rats only, for Mr. J. A. Thorpe tells me how in his garden at Paddington, another suburb of Sydney, the rats destroyed the molluscs in the manner described, to such an extent that whereas formerly they were a regular pest, few can now be found: the rats ensconce themselves beneath the broad foliage of the stag-horn ferns (*Platycerium alcicorne*), which forms a dry and cosy shelter.

In the original notice of this rat (Gould, Mamm. Austr. i. Introd. p. xxxv, 1863) the late W. Sharp Macleay described it as inhabiting the lofty eucalyptuses at Elizabeth Bay, where it "builds a nest among the branches with leaves and twigs like that of a bird."

Mr. Fletcher describes to me how he found a nest in the Linnean Society's gardens at Elizabeth Bay last November. It was in a tree, and taking it to be the work of a bird, he shook a supporting branch, whereupon a rat ran out. Mr. George Masters has often found the nest of this rat high up in bamboos; the nests are usually larger than a football and are not only used as nurseries but also as permanent habitations. On one occasion Mr. Masters ousted nine full-grown rats from one nest, and several times four and five have been discovered occupying a common retreat.

My informant also tells me that the rats gnaw holes in the bamboo-stems and take up their abode in the internodal chambers. He thinks that these shelters are formed during the wet season in order to escape the rains, and although he has examined a considerable number, he has never found the semblance of a nest within the cavities. The hole is always cut immediately below a node, so that the chamber is entered from its upper part. These holes were never observed near the ground; they were generally thirty or more feet above it, and were frequently found when a bamboo was cut down. Mr. Thorpe is likewise quite familiar with the nests in the higher branches of the bamboos and also with the rat-bored stems; he is of the opinion that, after gnawing the holes, the rats occupy the chambers in order to avoid the mid-day heat. It is also possible that by this means they seek to escape the Native Cats (*Dasyurus*) and other predaceous animals.

So far as is at present known, the distribution of this rat is very restricted—none of the places mentioned being more than three or four miles from the metropolis, while, up to my personal acquaintance with it, it had only been recorded from Elizabeth Bay; this, together with Paddington, Petersham, and Summer Hill, is on the southern side of Port Jackson, whereas North Sydney, Mosman's Bay, and Hunter's Hill, whence we have one example, are on the opposite shore.

[As I had always supposed from the original account of "*Hapalotis*" *arboricola*, these rats not only belong to true *Mus*, as Mr. Waite rightly observes, but there appears every reason to believe that they are merely introduced ship-rats: that is, forms of

the ubiquitous *Mus rattus*. The rats normally inhabiting ships are not, as is commonly supposed, *Mus decumanus*, but *Mus rattus*, and in most cases are of the grey variety of that animal, with white belly, though the black form may often be caught in the same ship as the grey. For instance, Mr. F. O. P. Cambridge caught two rats on board the Siemens cable-ship up the Amazons, one of which is nearly a typical *Mus rattus*, while the other almost exactly matches the specimens sent over by Mr. Waite as *Mus arboricola*. The habits of the latter, as here recorded, are in agreement with this supposition, for all the world over *Mus rattus* takes to roofs[1] and trees on meeting its formidable rival *Mus decumanus*, to which it leaves the gutters and cellars. This relative distribution of the two species has been frequently noticed in the East-end of London, near the Docks, where ship-rats are particularly common.

The fact that Mr. Waite knows of the occurrence of "*Mus arboricola*" only in and close to a large seaport town like Sydney is also, of course, confirmatory of the above opinion.—O. T.]

4. On the Spiders of the Island of St. Vincent.—Part III.[2]

By E. Simon[3].

[Received August 20, 1897.]

Ordo ARANEÆ.

Familia Theridiidæ.

Argyrodeæ.

Argyrodes cancellatus Hentz.

Rhomphæa (Ariamnes) paradoxa Taczanowski.

Ariamnes longissimus Keyserling.

Episineæ.

Janulus erythrophthalmus E. Sim., P. Z. S. 1894, p. 525.

Episinopsis simpliciifrons, sp. nov.

♀. *Long.* 3 *mm.—Cephalothorax nigricans, subtiliter coriaceus et opacus, vix distincte rufulo-variegatus. Oculi antici in lineam leviter procurvam, medii majores convexi, inter se distantes sed a lateralibus contigui. Oculi postici æqui, sat magni, in lineam valde recurvam, inter se fere æquidistantes, spatiis interocularibus oculis haud latioribus. Area mediorum subparallela, paulo longior quam latior, pone oculos anticos leviter convexa*

[1] Cf. *Mus* "*tectorum*," Savi.

[2] For Part I., see P. Z. S. 1891, p. 549; for Part II., P. Z. S. 1894, p. 519.

[3] Communicated by Dr. D. Sharp, F.R.S., F.Z.S., on behalf of the Committee for Investigating the Fauna and Flora of the West-Indian Islands.